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UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

FOREST INSECT INVESTIGATIONS

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SUBJECT—

TITLE

FOREST INSECT SURVEY - INYO NATIONAL FOREST

SEASON OF 1945

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Forest Insect Laboratory
Berkeley 4, California
January 23, 1946

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FOREST INSECT SURVEY - INYO NATIONAL FOREST

SEASON OF 1945

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January 23, 1946

FOREST INSECT SURVEY - INYO NATIONAL FOREST
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INFESTATION CONDITIONS IN 1944.

Since no survey was made in 1944, appraisal of infestation conditions and losses for that year are based on data secured in the 1945 survey. In general it appears that these infestations were decidedly subnormal in all species throughout the pine and fir forests and that resultant losses were perhaps the lowest on record.

The principal insect problems of the Inyo National Forest are concerned with bark beetle infestations in Jeffrey pine, lodgepole pine and white and red fir. In past years these species have suffered heavy losses on local areas where abnormal conditions have affected the course of infestation. Windfalls and snow break have contributed to increased infestation in Jeffrey pine, while intensive recreational use of lake shores and stream borders have established conditions favorable to the increase of bark beetle infestations in lodgepole pine. An epidemic of Oslar's tussock moth developed in fir in the early part of the last decade which resulted in widespread devastation in these stands. This situation was further complicated by aggressive attacks of Scolytus and Tetropium on the trees weakened by defoliation.

With the passing of the tussock moth epidemic in 1939, conditions rapidly improved and normal status was established by 1942. Conditions continued to improve in all stands during the next two years. The estimated 1944 losses in pine on all the reporting areas is summarized in Table 2. No insect control work was justified and none was done during that year. However, logging operations on a large scale were carried out in Jeffrey pine and fir stands in the Mammoth area. Unfortunately these operations included the old Mammoth check plot and the tussock moth check plots on Hess Hill, making them useless for research purposes. They were dependable yardsticks for measuring annual insect losses and had been used for several years for this purpose.

FIELD EXAMINATION 1945.

The survey of 1945 included the principal recreational and commercial forests of Mammoth and LeVining ranger districts. It was made August 14-18, 1945, by J. M. Miller and J. E. Patterson.

Areas examined.

Particular attention was given to the recreational areas on Reversed Creek, Mammoth Lakes and Rock Creek since past infestations have been damaging on these sites. The commercial forests south and east of Mono Craters and between Glass Creek and Mammoth were also examined.

Survey methods.

The general estimate of insect-caused losses is based principally on road traverse and observations from high points; supplemented by measured losses on roadside and study plots. Loss data on measured plots are shown in Table 1. The record is complete for 1944, but not for 1945 since the attack period was not over when the data were taken. Total loss for 1945 will exceed the values shown in the table.

Current insect trends and losses.

Infestations throughout the areas examined are low endemic in character. However, plot data as well as general observations indicate increasing losses in Jeffrey pine. More lodgepole pine trees were attacked in 1945 on recreational areas than were killed in 1944 on the same ground. This result indicates that infestations in this species is also increasing. Early increased losses may be expected in both species in Mammoth and Bald Mountain units.

Insects involved in current losses.

Infestations in Jeffrey pine are due mainly to the Jeffrey pine beetle, Dendroctonus jeffreyi Hopk.; Ips spp. are also active in these stands but play a minor role in losses. Damage to lodgepole pine results almost entirely from attacks by the mountain pine beetle, D. monticolae Hopk. Oslar's tussock moth, formerly prevalent and widespread in white fir stands, has practically disappeared. Scolytus spp. infestations which followed defoliation has greatly diminished.

AREAS REQUIRING SPECIAL ATTENTION.

If the current upward trend of infestations noted in Reversed Creek campgrounds and on the recreational areas at Mammoth is continued, these situations can easily become critical. Increased losses are expected to occur in the commercial stands of Jeffrey pine in Mono Mills region, particularly north of Bald Mountain. These areas should be closely watched and periodic examinations made to detect possible early epidemic losses.

CONTROL RECOMMENDATIONS.

Current losses are of insufficient amount to warrant control work, therefore none is recommended at this time.

Table 1. Recorded pine losses sustained on roadside plots in 1944 & 1945.

Reporting Unit	Sample	Acres	Tree spp.	Trees killed in 1944 (Complete record) Trees	Volume	Vol./ac.	Trees killed in 1945 (Partial record) Trees	Volume	Vol./ac.
Mammoth	Road plot RD-1	52	JP	2	2,600	50	1	1,070	21
Glass Creek	Road plot RD-2	128	JP	0			0		
Mono Craters	Road plot RD-3	160	JP	0			1	4,750	30
Bald Mtn.	Risk plot	20	JP	1	1,860	93	1	2,400	120
Totals		360		3	4,460	143	3	8,220	171
Averages per sample		90		.7	1,112	36	.7	2,054	62

Table 2. Estimated bark beetle-caused losses in pine on reporting areas for the years 1944 and 1945

Reporting Area	Timbered acreage	Infested acreage	Tree spp.	Timber killed in 1944 on infested area. (Complete) Trees	Vol.MBM	Timber killed in 1945 on infested area. (Partial) Trees	Vol.MBM
Mammoth	25,000	15,000	JP	160	120	140	100
		10,000	LP	60	10	80	20
		25,000		220	130	220	120
Mono Craters	10,000	10,000	JP	50	45	60	60
Bald Mtn.	22,000	12,000	JP	130	115	160	140
Round Mtn.	7,000	4,000	JP	30	18	50	30
		3,000	LP	80	12	100	15
		7,000		110	30	150	45
Total Jeffrey Pine		41,000	JP	370	298	410	330
Total Lodgepole Pine		13,000	LP	140	22	180	35
TOTAL, ALL PINE		54,000		510	320	590	365